

FIG 1A

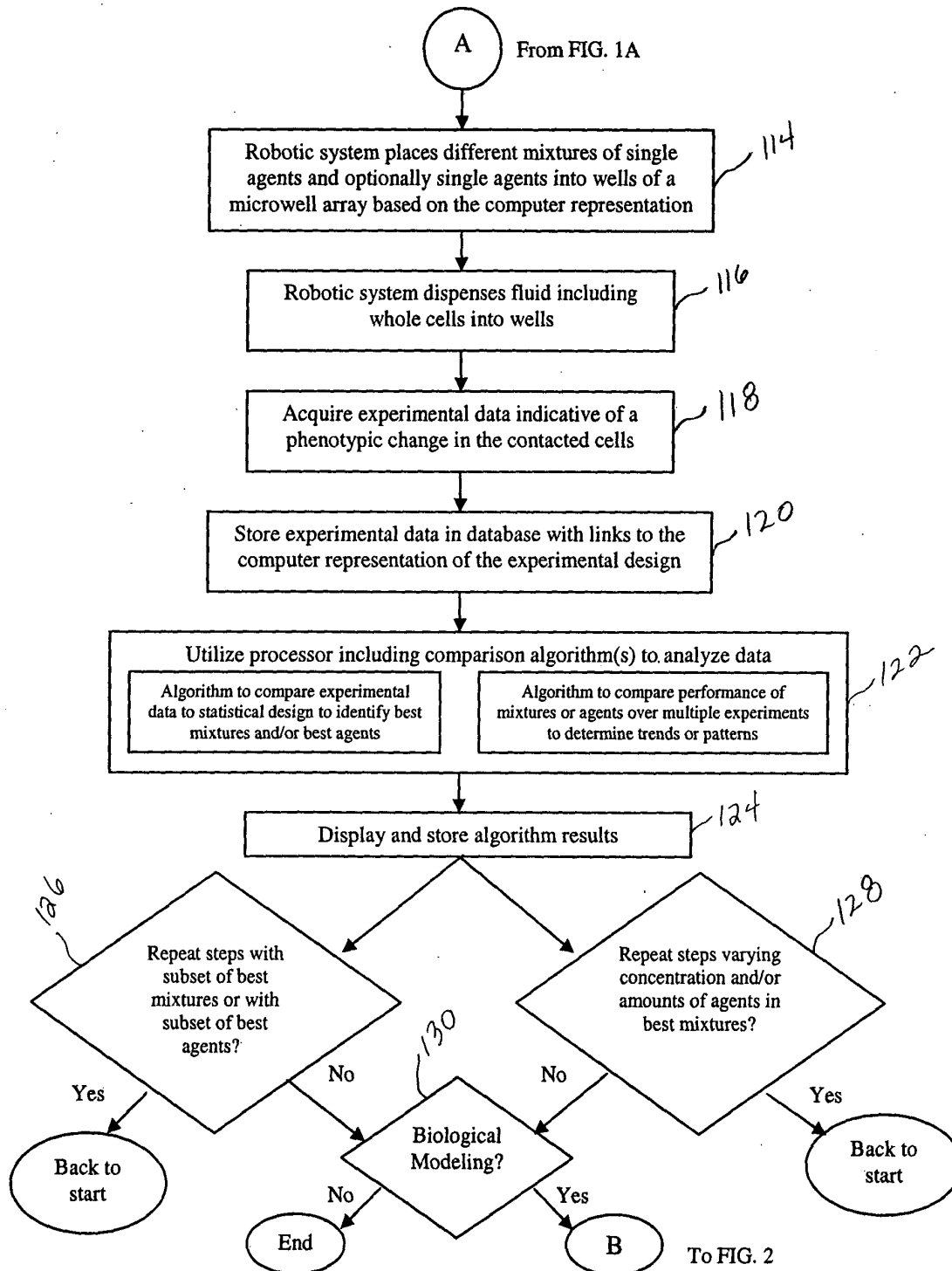


FIG 1B

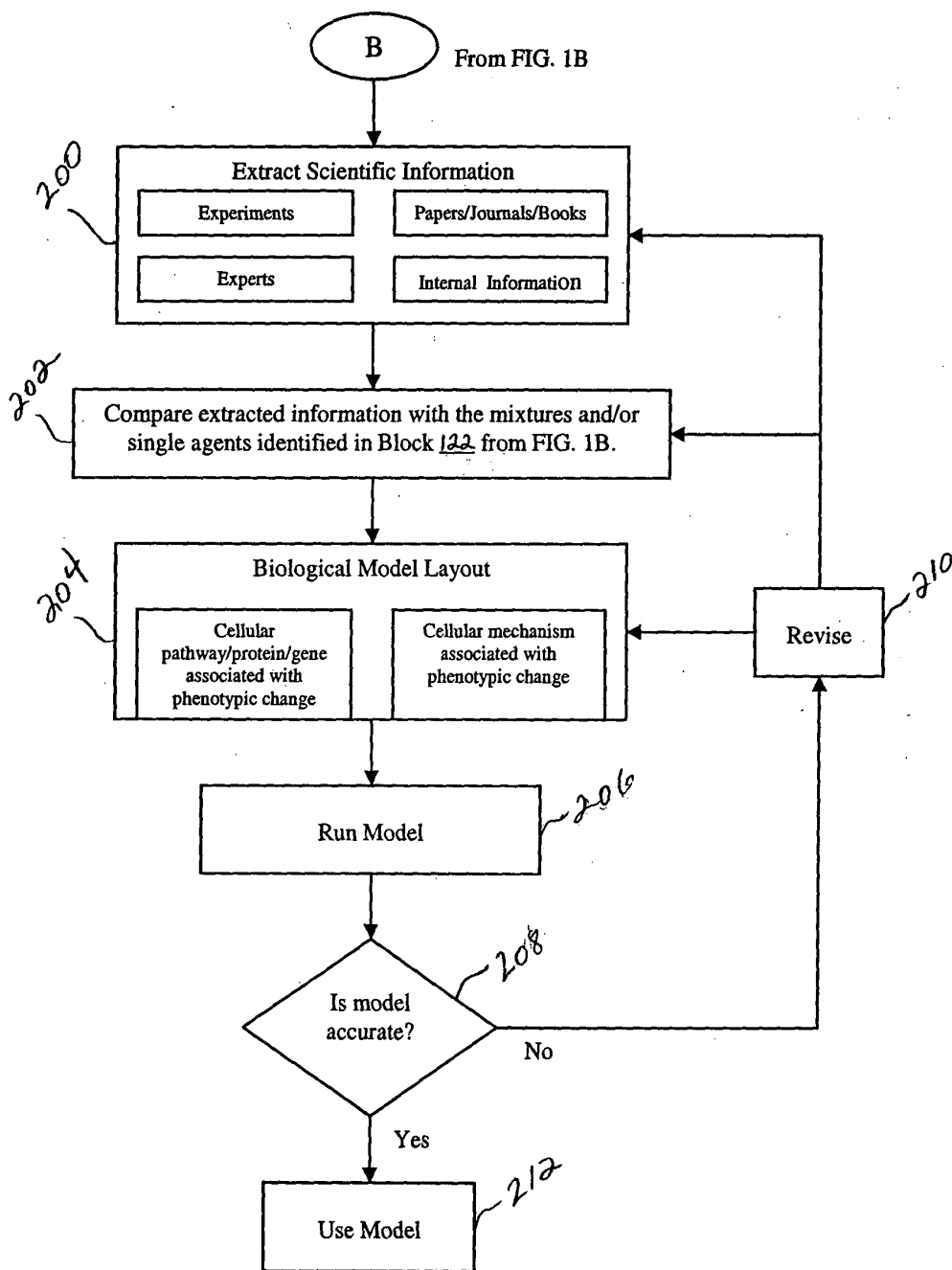


FIG 2

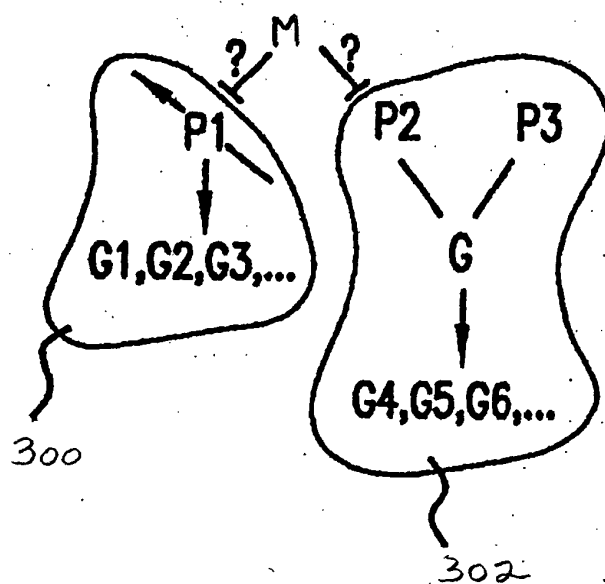
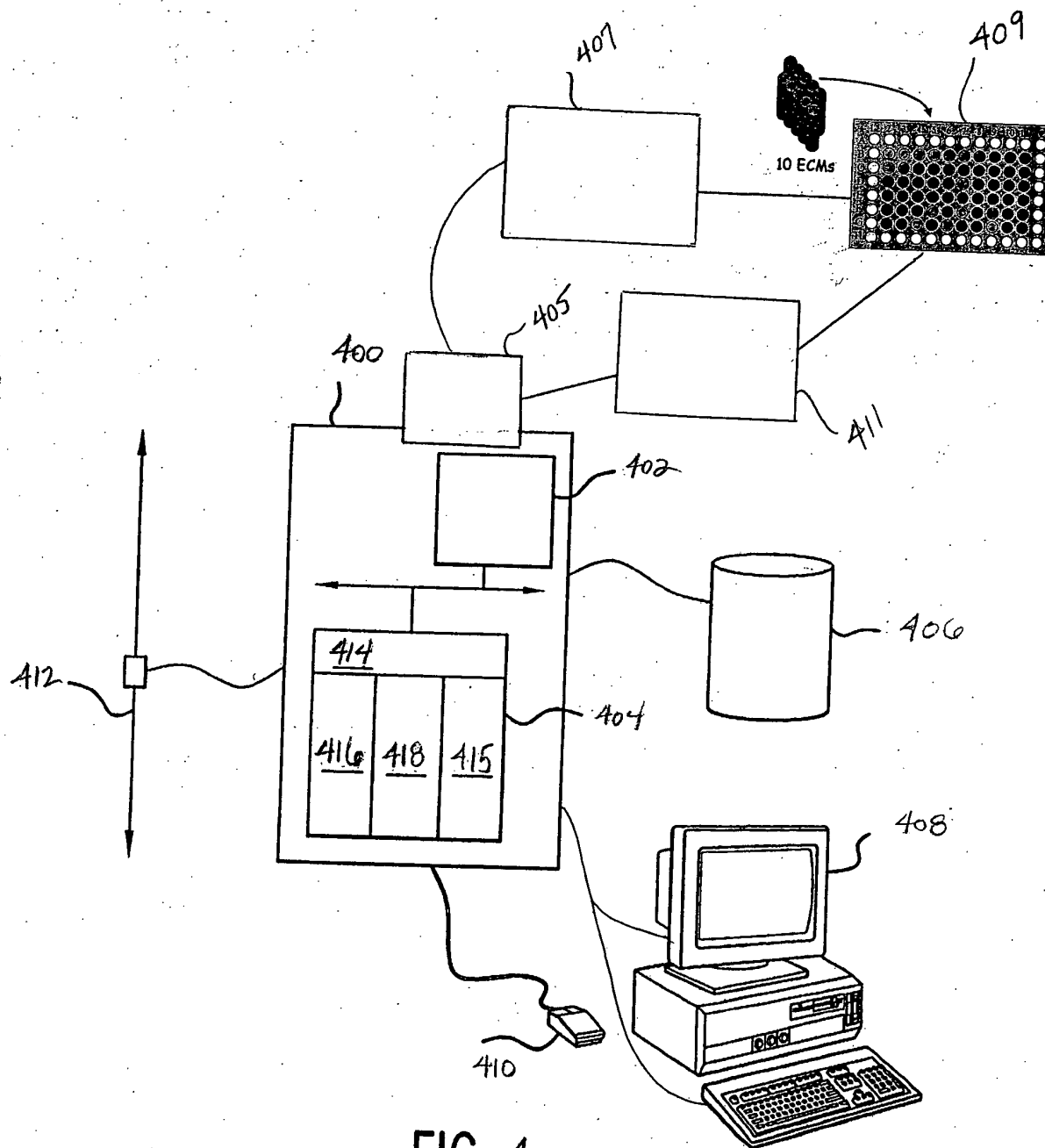


FIG. 3



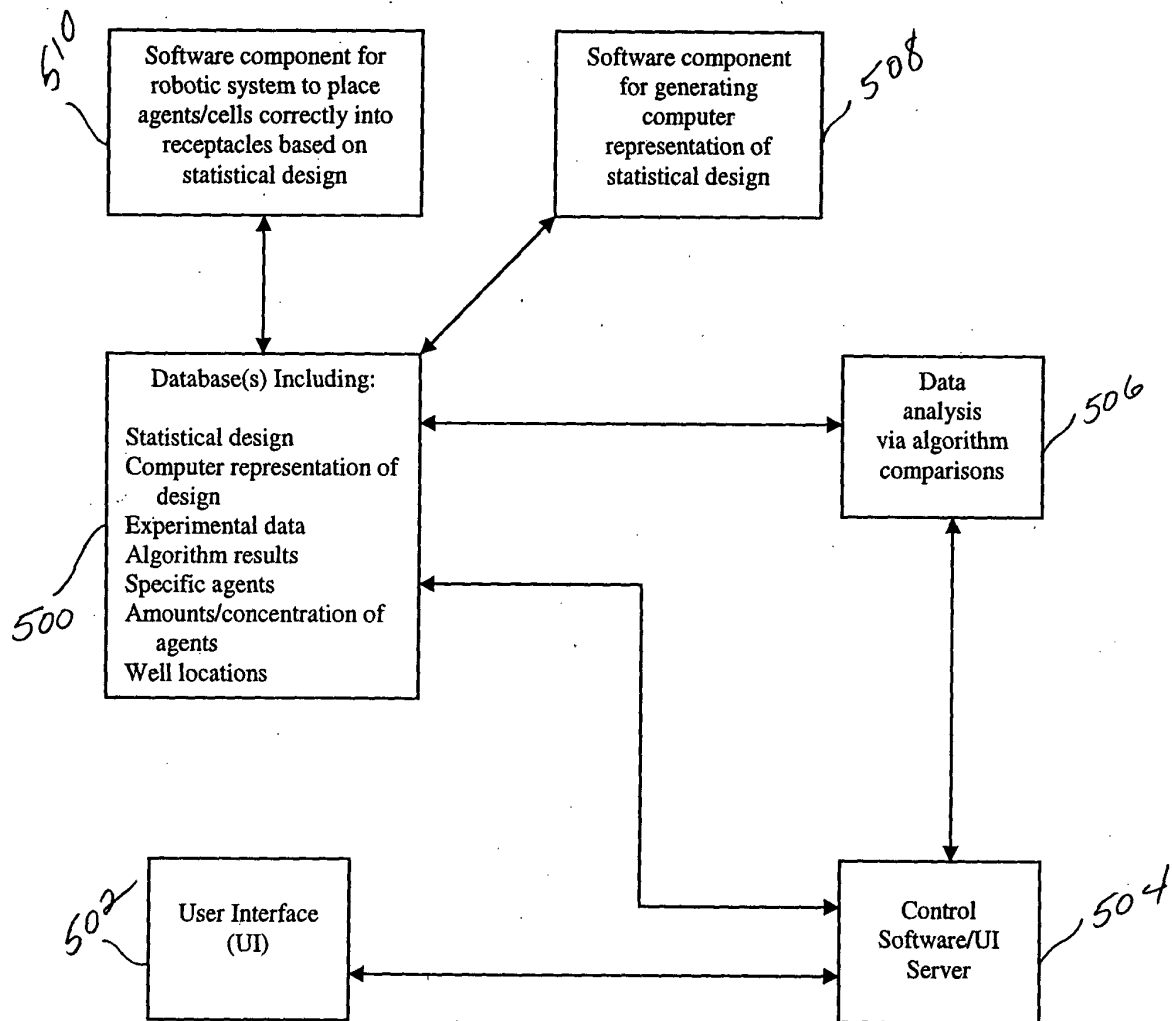


FIG 5

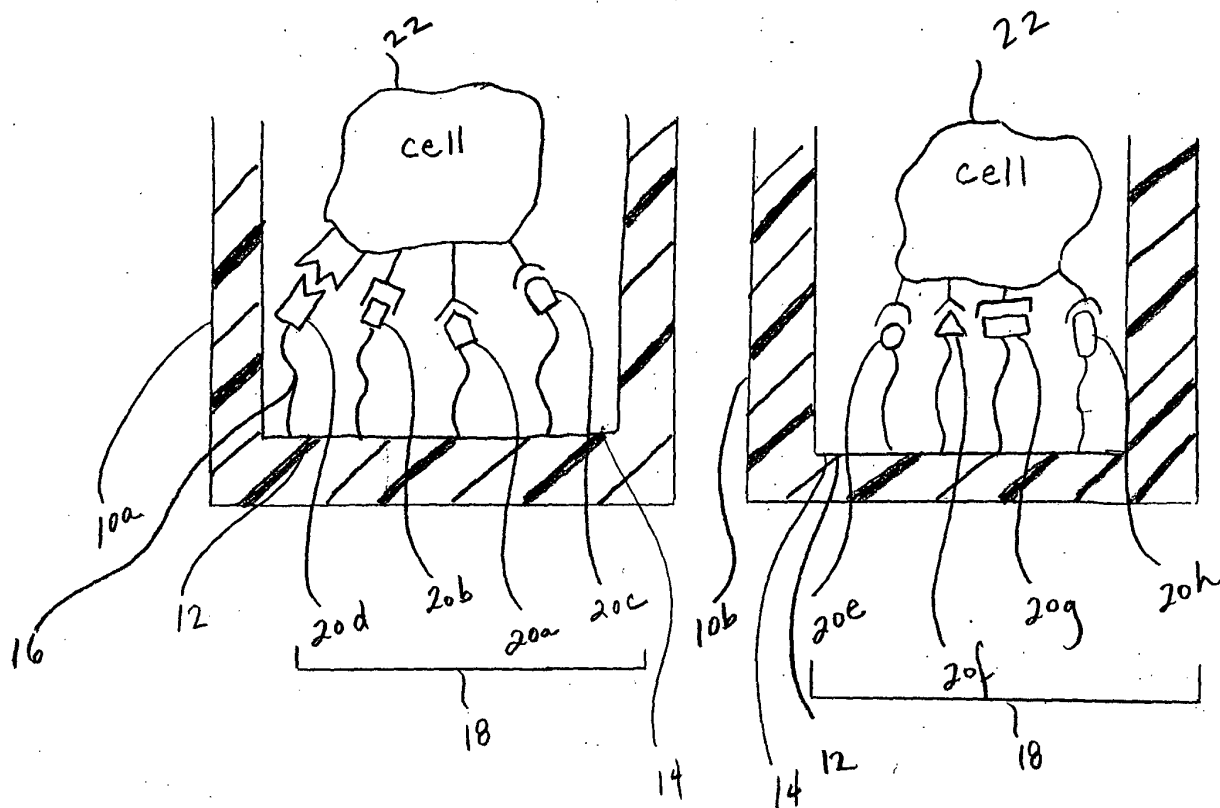


Fig. 6

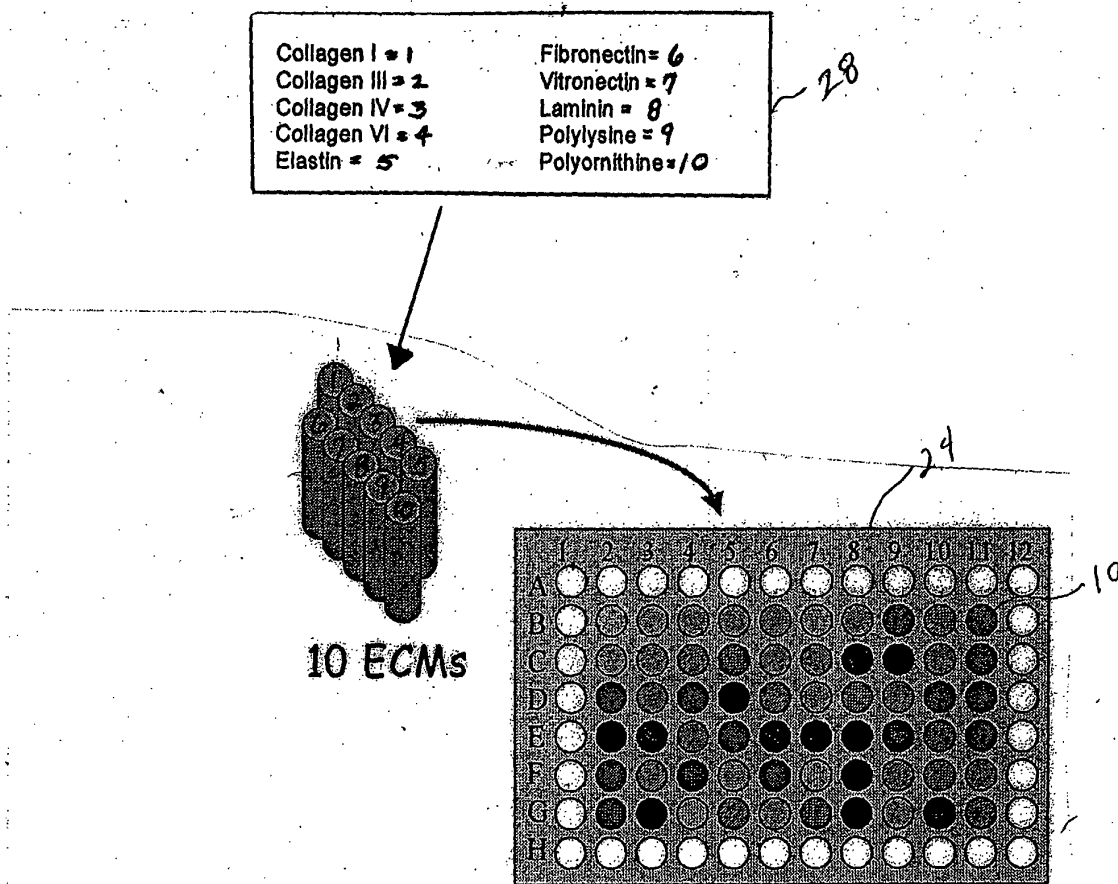
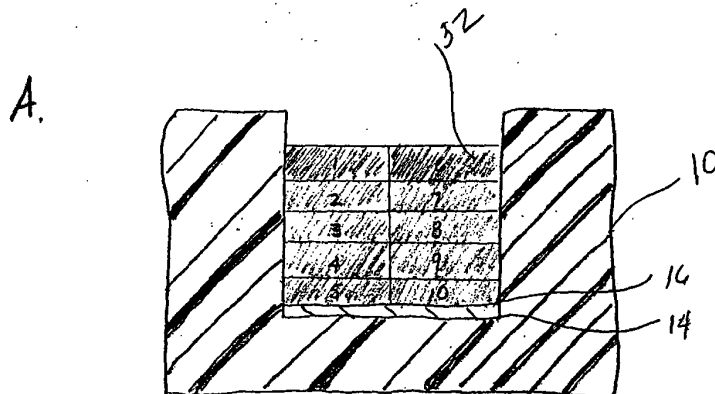
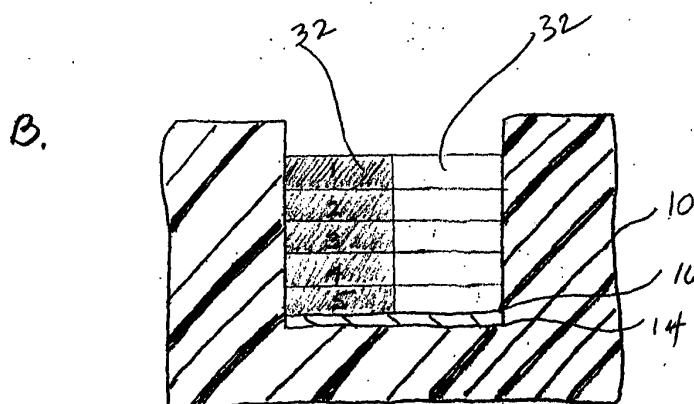


Fig. 7

Fig. 8



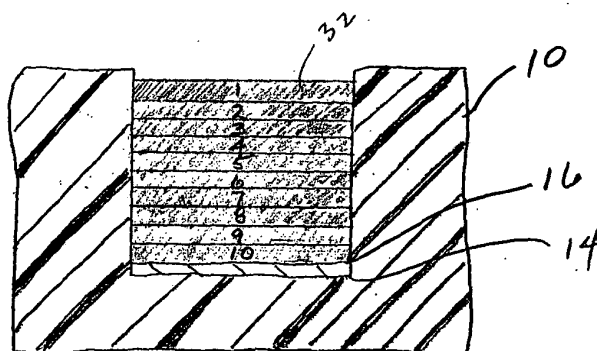
Case 1: All 10 factors are present
 overall factor concentration = $[10/10] = [1]$
 [1] factor/well



Case 2: 5 out of 10 factors are present
 overall factor concentration = $[5/10] = [0.5]$
 [0.5] factor/well

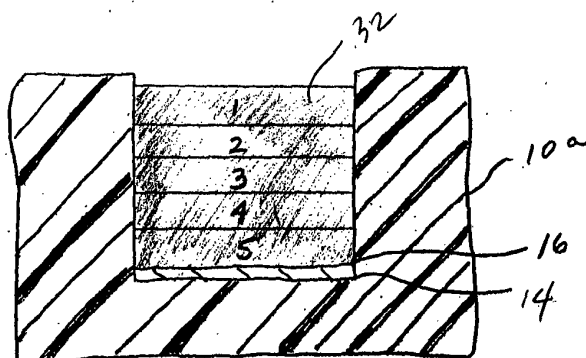
Fig. 9

A.



Case 1 :: All 10 factors are present
Overall factor concentration = $[10/10] = [1]$
[1] factor/well

B.



Case 2: 5 out of 10 factors are present
Overall factor concentration = $[1]$
[1] factor/well

Title: COMPUTER SOFTWARE AND ALGORITHMS FOR SYSTEMS BIOLOGICALLY LINKED TO CELLULAR PHENOTYPE

Inventors: M. Heidaran and P. Haaland - Docket No.: 102-549

Page 11 of 21

Run	Type	A:Fibronectin (µl)	B:Collagen I (µl)	C:Vitronectin (µl)	D:Collagen VI (µl)	E:Collagen III (µl)	F:Laminin (µl)	G:Collagen IV (µl)	H:Elastin (µl)	J:Poly-L-Lysine (µl)	K:Poly-L-Ornithine (µl)
1	CentEdge			25		25			25		
2	CentEdge	25							25		
3	CentEdge				25				25		
4	Vertex									50	25
5	CentEdge				25						
6	CentEdge	25	25							25	
7	CentEdge			25							
8	CentEdge					25			25		
9	Vertex			50							
10	CentEdge	25					25				
11	Center	5	5	5	5	5	5	5	5	5	5
12	Vertex							50			
13	CentEdge	25						25			
14	CentEdge	25			25						
15	CentEdge	25									25
16	CentEdge		25				25	25			
17	CentEdge			5	5	5	5	5	5	5	5
18	Center	5	5	5	5	5	5	5	5	5	5
19	Center	5	5	5	5	5	5	5	5	5	5
20	CentEdge				25		25		25		
21	CentEdge					25			25		
22	CentEdge		25			25			25		
23	CentEdge	25									
24	CentEdge			25	25						
25	Vertex		50								
26	Vertex	50									
27	CentEdge				25			25			
28	Vertex					50					
29	CentEdge			25						25	
30	CentEdge		25								25
31	Vertex						50				
32	Vertex					25					25
33	CentEdge		25			25			25		
34	CentEdge				25					25	
35	CentEdge					25					25
36	CentEdge			25					25		
37	CentEdge			25							25
38	CentEdge			25					50		
39	Vertex										
40	CentEdge				25	25					5
41	Center	5	5	5	5	5	5	5	5	5	5
42	Vertex										50
43	CentEdge	25								25	
44	CentEdge	25			25						
45	CentEdge		25					25			
46	CentEdge		25	25							
47	CentEdge		25							25	
48	Vertex				50						
49	CentEdge			25			25				
50	CentEdge			25				25			
51	CentEdge					25					25
52	CentEdge		25		25						

Figure 10

Title: COMPUTER SOFTWARE AND ALGORITHMS FOR SYSTEMS BIOLOGICALLY LINKED TO CELLULAR
PHENOTYPE

Inventors: M. Heidaran and P. Haaland - Docket No.: 102-549

Page 12 of 21

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B		VN / C III	FN / ELA	Col VI / ELA		C VI / PO	FN / CI	VN / PL	C III / ELA		FN / LAM	
C		MID		FN / C IV	FN / C VI	FN / PO	CI / LAM	C III / LAM	MID	MID	C VI / LAM	
D		C III / C IV	CI / ELA	FN / C III	VN / C VI			C VI / C IV		VN / PL	CI / PO	
E			C III	C VI / PL	CI / C III	C III / PL	C III / PL	VN / ELA	VN / PO		C VI / C III	
F		MID		FN / PL	FN / VN	CI / C IV	CI / VN	CI / PL		VN / LAM	VN / C IV	
G		C III / PO	CI / C VI									
H												
			Midpoint - contains all 10 adhesion ligands									
			Single adhesion ligand containing wells									

Figure 11

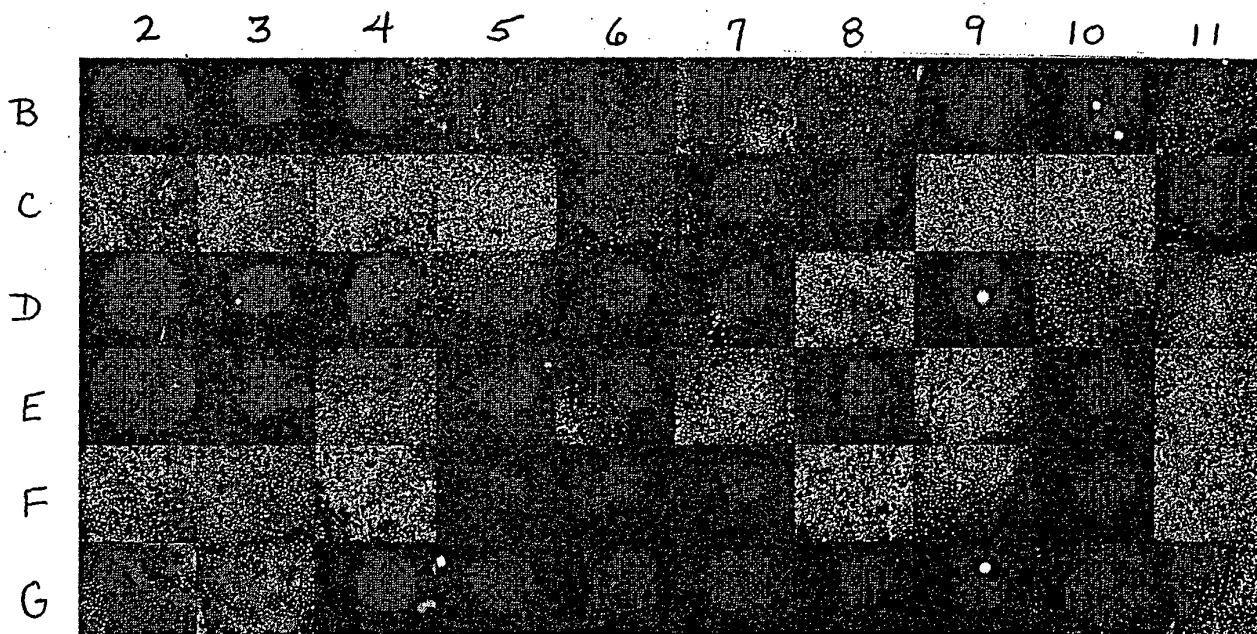


Figure 12

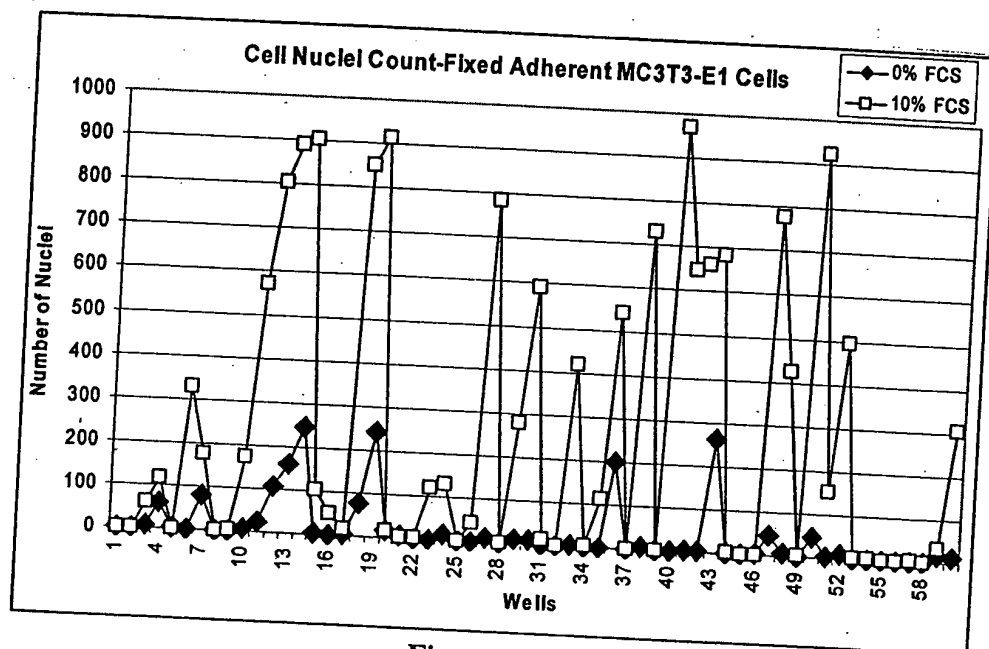


Figure 13

Cell Count - MC3T3 24hrs - No Serum

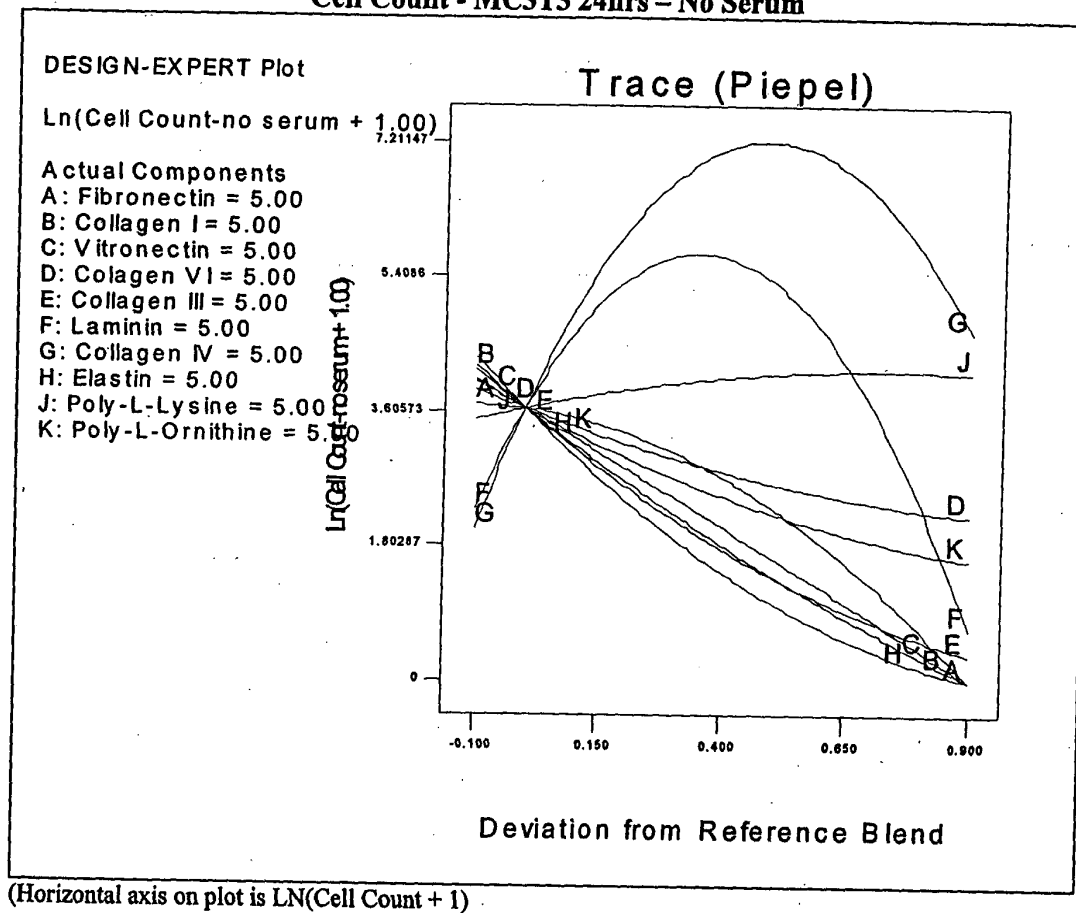


Figure 14

Cell Count - MC3T3 24hrs - 10% Serum

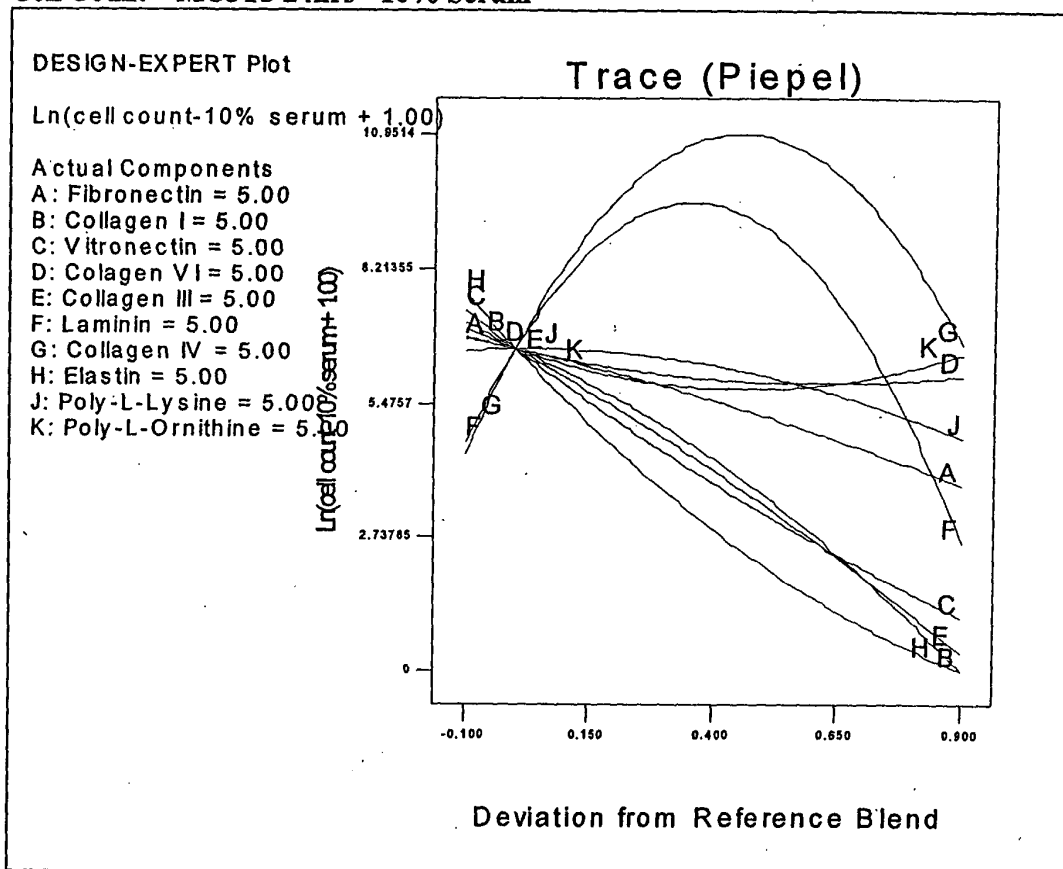


Figure 15

Title: COMPUTER SOFTWARE AND ALGORITHMS FOR SYSTEMS BIOLOGICALLY LINKED TO CELLULAR
PHENOTYPE

Inventors: M. Heidaran and P. Haaland - Docket No.: 102-549

Page 17 of 21

Run	F01	F02	F03	F04	F05	F06	F07	F08
1	-1	-1	-1	1	-1	-1	-1	1
2	-1	-1	1	1	-1	-1	-1	-1
3	1	1	1	-1	-1	-1	-1	-1
4	1	1	1	-1	1	1	1	1
5	1	-1	1	1	1	-1	1	-1
6	-1	-1	-1	1	1	-1	-1	-1
7	1	-1	1	-1	-1	-1	1	-1
8	1	-1	1	-1	1	-1	-1	1
9	-1	1	1	1	1	1	-1	-1
10	1	1	1	1	-1	-1	-1	-1
11	-1	-1	-1	-1	-1	1	1	-1
12	1	-1	-1	-1	-1	-1	1	1
13	1	1	-1	-1	-1	1	1	1
14	-1	-1	-1	1	1	-1	1	1
15	1	-1	-1	1	1	1	1	1
16	-1	1	-1	1	-1	-1	-1	1
17	-1	-1	1	-1	-1	-1	1	1
18	1	-1	-1	-1	1	1	-1	1
19	1	1	-1	-1	-1	-1	1	-1
20	1	-1	-1	1	-1	1	1	1
21	-1	-1	-1	-1	1	-1	-1	-1
22	1	-1	1	-1	1	-1	-1	-1
23	-1	-1	1	-1	-1	1	1	1
24	-1	1	-1	-1	1	1	1	-1
25	-1	1	-1	1	-1	-1	1	-1
26	1	1	1	1	1	1	1	1
27	-1	1	1	1	-1	1	1	1
28	-1	1	-1	-1	-1	-1	1	-1
29	1	1	-1	1	1	1	1	-1
30	1	-1	-1	1	-1	-1	1	1
31	-1	1	1	-1	1	-1	1	-1
32	1	1	-1	1	-1	1	-1	-1
33	1	1	-1	-1	-1	-1	-1	1
34	1	1	1	1	-1	-1	1	1
35	-1	-1	-1	1	-1	-1	1	-1
36	1	-1	-1	-1	-1	1	-1	-1
37	-1	1	-1	-1	1	-1	1	-1
38	1	1	1	1	1	-1	-1	-1
39	1	1	-1	-1	1	1	1	1
40	-1	1	1	1	-1	1	-1	1
41	1	-1	1	1	-1	1	-1	1
42	1	1	1	-1	1	-1	1	-1
43	-1	-1	1	-1	1	1	1	-1
44	-1	1	1	1	1	-1	-1	1
45	-1	1	1	-1	1	1	-1	1
46	1	1	-1	1	1	-1	1	-1
47	1	-1	-1	-1	1	-1	-1	1
48	-1	1	-1	1	1	1	-1	1
49	-1	-1	1	1	1	1	1	-1
50	-1	-1	1	1	-1	1	1	-1
51	-1	-1	1	1	1	-1	1	1
52	1	1	-1	1	-1	1	-1	-1
53	-1	-1	-1	-1	1	1	-1	-1
54	-1	1	-1	-1	-1	1	-1	-1
55	1	-1	-1	1	1	1	-1	1
56	-1	1	-1	-1	1	-1	-1	1
57	-1	-1	1	-1	-1	1	-1	1
58	-1	1	1	-1	-1	-1	-1	1
59	1	-1	1	-1	-1	1	-1	-1
60	1	-1	1	1	1	1	-1	-1

Fig. 16a

Page 18 of 21

Fig. 16b

Inventors: M. Heidaran and P. Haaland - Docket No.: 102-549

Fig. 16c

Title: COMPUTER SOFTWARE AND ALGORITHMS FOR SYSTEMS BIOLOGICALLY LINKED TO CELLULAR
PHENOTYPE

Inventors: M. Heidaran and P. Haaland - Docket No.: 102-549

Page 20 of 21

F27	F28	F29	F30
1	-1	1	-1
-1	1	-1	1
1	-1	-1	-1
1	-1	-1	-1
1	1	1	-1
-1	-1	1	-1
-1	1	1	1
-1	-1	-1	-1
-1	1	-1	1
-1	1	-1	-1
-1	1	-1	-1
1	-1	1	1
1	-1	-1	1
1	1	-1	1
1	-1	1	1
-1	1	-1	1
-1	1	-1	-1
-1	1	1	1
1	1	-1	1
1	1	-1	-1
-1	-1	-1	-1
-1	-1	-1	1
1	1	1	1
-1	1	-1	-1
-1	-1	1	-1
-1	-1	-1	-1
1	1	1	1
1	1	-1	-1
-1	-1	1	1
-1	-1	-1	-1
1	1	1	1
-1	1	1	-1
-1	-1	1	-1
1	1	1	-1
1	1	1	1
1	-1	1	-1
1	1	1	1
-1	-1	-1	1
-1	1	1	-1
1	-1	1	1
-1	-1	1	1
1	1	1	1
-1	-1	1	1
-1	-1	1	1
1	1	1	-1
1	-1	-1	1
1	1	1	1
-1	-1	-1	1
-1	1	1	-1
1	-1	1	1
-1	-1	1	1
-1	-1	1	1

Fig. 16d

Fig. 17

NIPM Factor	Factor	Receptor	Classification
F01	Sonic hedgehog amino-terminal peptide (Shh-N)	PATCHED (PTCH-1) / PTCH-2 / SMO (smoothened)	7-pass transmembrane / 7-pass transmembrane / GPCR
F02	BMP-cocktail	BMPRc-1A, BMPRc-1B, BMPRc-2	BMPR-Ser/Thr Kinase
F03	Cholesterol (water soluble formulation)	LDL Rc / SR-BI	channels & membrane transporters
F04	Leptin (human, recombinant)	Leptin Receptor	Cytokine Rc
F05	Prokinin (human, recombinant)	Prokinin Receptor	Cytokine Rc
F06	Ciliary neurotrophic factor (CNTF) (human, recombinant)	CNTFR-alpha + gp130 + LIF Rc	Cytokine Rc
F07	Amphiregulin (long form, recombinant)	EGFR	EGFR-tyrosine kinase
F08	Fibroblast Growth Factor-8c (FGF-8c) (mouse, recombinant)	FGF Rc Family	FGFR-tyrosine kinase
F09	Fibroblast Growth Factor-7 (FGF-7) = KGF	FGF Rc Family	FGFR-tyrosine kinase
F10	Vasoactive Intestinal Peptide (VIP)	VPAC1R / VPAC2R	GPCR
F11	Gastrin/CCK8-cocktail	CCK-B/Gastrin Rc	GPCR
F12	Neuropeptide Y	Neuropeptide Y Rc Family (Y1-Y6)	GPCR
F13	Thrombin/TXAZ-cocktail	thromboxane A2 Receptor	GPCR
F14	C natriuretic peptide (human, porcine, rat frag 32-53)(CNP)	Guanylate Cyclase B (GC-B) Rc (ANPRA & ANPR-B)	Guanylyl Cyclase
F15	Interleukin-3 (IL-3) (human, recombinant)	IL3Rc-beta (aka GMCSFRc) / IL3Rc-alpha	IL-Cytokine Rc
F16	Interleukin-18 (IL-18) (human, recombinant)	IL18Rc	IL-Cytokine Rc
F17	Midkine (MK) (human, recombinant)	PTPzeta	Miscellaneous
F18	Neurturin (NTN)	GFRa1 / GFRa2 / c-ret	Miscellaneous
F19	Dibutyryl cyclic AMP	cAMP Receptor Protein Kinase (PKA)	Ser/Thr Kinase
F20	DMF (n n dimethylformamide); a polar solvent	Not receptor mediated	Small Molecule
F21	Cycloheximide (actidione)	Not receptor mediated	Small Molecule
F22	Platelet-derived endothelial cell growth factor (PD-ECGF) (aka thymidine phosphorylase)	Not Receptor mediated	Small Molecule
F23	Laminin	Laminin-Elastin Rc / alpha6 beta4 integrin	surface-matrix receptor
F24	Transforming Growth Factor beta3 (human, recombinant)	TGFBrc-1, TGFBrc-2, TGFBrc-5	TGFBrc-Ser/Thr Kinase
F25	Estradiol, beta (water soluble formulation)	Estrogen Receptor-alpha (ER-A) / Estrogen Receptor-beta (ER-B) / Estrogen-related receptor alpha (ERR-A) / Estrogen-related Receptor beta (ERR-B)	Transcription Factor
F26	Hydrocortisone	Hydrocortisone Rc	Transcription Factor
F27	nuclear factor of activated T cells (NFAT), proteins (NFAT1-NFAT5)	Not Receptor mediated	Transcription Factor
F28	Hepatocyte Growth Factor (HGF, scatter factor)	c-Met (HGFR)	tyrosine kinase
F29	Growth Hormone	GH Receptor	tyrosine kinase
F30	Brain-derived Neurotrophic Factor (BDNF) (human, recombinant)	TrkB	tyrosine kinase